

REMARKS/ARGUMENTS

By the present amendment, claims 42, 53, 60 and 61 have been amended in order to specify that the second nucleic acid sequence comprises "(i) a) a nucleic acid sequence encoding an oleosin protein having the amino acid sequence shown in SEQ ID NO:2 or SEQ ID NO:5 or b) a nucleic acid encoding a caleosin protein and having the nucleic acid sequence shown in SEQ ID NO:34 or SEQ ID NO:35 to provide targeting of the fusion polypeptide to a lipid phase ...". This amendment is supported in the application as filed, for example, on page 15, lines 3-9. Claims 59 and 66 have been amended in order to specify that the oleosin encoded by the second nucleic acid sequence has the sequence shown at SEQ ID NO:1 or SEQ ID NO:4. Support for this amendment can be found in the application as filed, for example, in Figures 2 and 4.

The amendments to the claims have been made without prejudice and without acquiescing to any of the Examiner's objections. Applicant reserves the right to pursue any of the deleted subject matter in a further divisional, continuation or continuation-in-part application. No new matter has been entered by the present amendment and its entry is respectfully requested.

The office action dated March 2, 2009 has been carefully considered. It is believed that the amended claims and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

Restriction Requirement

Applicant notes that the Examiner has maintained that claims 51-55 and 62 remain withdrawn. Again, Applicant requests rejoinder of these claims on the basis that the amended generic claim should now be considered allowable.

35 USC §112, First Paragraph

(a) Enablement

The Examiner has objected to claims 42-50, 56-61 and 63-67 under 35 USC §112, first paragraph as lacking enablement. In particular, the Examiner states that the specification is only enabling for a chimeric nucleic acid sequence encoding a fusion protein comprising a full length oleosin (of SEQ ID NO:1 or SEQ ID NO:2) and comprising a cleavable linker. We respectfully disagree with the Examiner for the reasons that follow.

Regarding the oil body protein, we disagree that the specification is only enabling for the oleosin having the polynucleotide sequence of SEQ ID NO:1 and the polypeptide sequence of SEQ ID NO:2. Applicant maintains their position that the specification enables the use of any oil body protein (see the response filed December 19, 2008). However, in order to expedite prosecution, Applicant has amended the claims to recite specific oleosin and caleosin sequences taught in the specification. The specification clearly enables the oleosin protein from Brassica, having the polynucleotide sequence shown in SEQ ID NO:4 and the polypeptide sequence shown in SEQ ID NO:5. In this regard, we refer to Example 17 which describes the isolation of the Brassica napus oleosin gene and Example 18 which uses the B. napus oleosin to produce GUS. Further, the application also clearly enables a caleosin sequence having a polynucleotide sequence shown in SEQ ID NO:34 or SEQ ID NO:35. In this regard, we refer to Example 20 that describes the isolation of an Arabidopsis caleosin gene and Example 22 which describes the use of the caleosin gene to produce GUS. Accordingly, the amended claims which refer to specific sequences are fully enabled by the disclosure.

Regarding the cleavable linker, the Examiner appears to be of the view that the cleavable linker is an essential requirement for the main claims. We disagree with the Examiner as the application is clear in stating that providing a linker is not an essential embodiment. In addition, as demonstrated in Examples 12 and 14, linkers are not required in order to prepare the heterologous polypeptide according to the application.

As described in the application on pages 17 and 18, the invention contemplates the use of heterologous proteins fused to oleosins. For example, an enzyme can be produced and used while still associated to the oil body protein. Further, as described on page 35, certain heterologous proteins may be capable of undergoing self-release, which is another embodiment that does not require a linker sequence. Therefore, limiting the claims to include a linker sequence is not required.

In view of the foregoing, we respectfully request that the objection to the claims as lacking enablement be withdrawn.

(b) Written Description

The Examiner has objected to claims 42-50, 56-61 and 63-67 under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

On pages 10 and 11 of the office action, the Examiner states that

"the claims as interpreted, are directed to a genus of polynucleotides and encoding fusion polypeptides and to a method of making said fusion polypeptide that involves a genus of polynucleotides and encoding polypeptides with no support in the specification for the structural details associated with the fusion, i.e., any chimeric nucleic acid sequence encoding a fusion polypeptide comprising any nucleic acid sequence that encodes any oil body protein of undefined structure from any source necessary for the functional activity of said oil body protein, ..."

As mentioned above, the claims have been amended in order to specify the sequence of the oleosin or caleosin. Therefore, the claims now provide an adequate structural description of the claimed oleosins or caleosins. Further, as noted above, the

specification also provides exemplary support for the claimed sequences in the Examples. Accordingly, the claims as amended meet the written description requirements.


In view of the foregoing, we respectfully request that the objection to the claims under 35 §112, first paragraph as lacking written description, be withdrawn.

The Commissioner is hereby authorized to charge any fee (including any claim fee) which may be required to our Deposit Account No. 02-2095.

In view of the foregoing comments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, he is kindly requested to contact the undersigned by telephone at (416) 957-1682 at his convenience.

Respectfully submitted,

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